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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/764,524

01/27/2004

Tohru Ikeda

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03/17/2008

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EXAMINER

ZHU, RICHARD Z

ART UNIT

PAPER NUMBER

2625

MAIL DATE

DELIVERY MODE

03/17/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/764,524	IKEDA, TOHRU	
	Examiner	Art Unit	
	Richard Z. Zhu	2625	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 February 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,4-7 and 9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 4-7, and 9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 02/08/2008 has been entered.

Response to Applicant's Arguments

2. Applicant's arguments are persuasive. Previous grounds of rejections are withdrawn and new grounds of rejections are entered in view of applicant's amendment to the claims.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1, 4-7, and 9 are rejected under 35 USC 103(a) as being unpatentable over ***Hudson et al (US 6057933 A)*** in view of ***Yano et al (US 5751310 A)***.

Regarding the Apparatus of Claim 7 therefore Method of Claim 1 and Program of Claim 9, *Hudson* discloses an image processing method comprising the steps of and means for:

inputting image data representing an image, the image data including a plurality of items of color-components (**Figure 2, Printer 24 and Printer Controller 28. See Col 3, Rows 33-48, Printer Controller 28 receives image data from Computer 22. The plurality of color components being CMYK, see Col 3, Row 66- Col 4, Row 21);**

deciding output data of a plurality of items of color-components (**Col 3, Row 66 – Col 4, Row 21, converting input RGB signals into halftone processed CMYK outputs)** which represent an image reproduced by an output device (**Fig 2, output device being printer 24**), by referring to a table in which a correspondence between input data and a plurality of output patterns is stored (**Figs 4-5, Col 4, Rows 30-63, Incrementor 56 and see Col 5, Rows 43-47, output patterns are error diffusion incremented outputs for channels C, M, Y and K**), based upon the input data (**Col 4, Rows 22-35, the outputs at Incrementor 56 of each channel is dependent upon the input CMYK base output level**), wherein the input data is generated by adding data distributed based upon color difference to the image data of the plurality of color components (**Figs 4-5, diffused error term being added to the base output level to determine a final incremented output, see Col 5, Rows 31-43**), and the color difference is generated by calculating the difference between the input data and output data (**Col 5, Rows 31-43, as it is known in error diffusion, errors are calculated on the basis of color difference between quantized output and original input of each color channel**);

outputting the output data of the plurality of color components decided in said deciding step (**Col 5, Rows 44-63**);

wherein the output data is decided from candidates of a plurality of output patterns which are respective combinations of the plurality of color components based upon the color difference (**Figs 4-5 and see Col 5, Rows 31-63, in particular the embodiment of Fig 5 where the output patterns are combinations of color components C, M, Y and K based upon diffused errors**).

Hudson does not disclose the combinations in which cyan and magenta are simultaneously used have been excluded from the candidates in high contrast area.

Yano discloses an image processing method and apparatus for improving image visual qualities by resolving the deterioration of different inks (**Fig 3 and see Abstract, Background arts, and Summary**) whereas combinations in which cyan and magenta are simultaneously used have been excluded from the candidates in high contrast area (**Col 9, Row 32 – Col 10, Row 10, in particular, Col 10, Rows 1-10. To prevent blotting deteriorations in areas of high contrast, true black inks are applied whereas composite black inks formed by CMY are applied in areas that are not high contrast**).

It would've been obvious to one of ordinary skill in the art at the time of the invention to exclude at least the use of cyan and magenta in areas of high contrast as suggested by *Yano* in order to prevent deterioration of images in high contrast area between black pixel and color pixels by forming black pixel using true black ink instead of composite black ink employing cyan, magenta, and yellow (*Yano*, **Col 9, Rows 37-57**).

With respect to the computer program reside upon a statutory computer readable medium, *Hudson* discloses a control program for causing a computer to execute the image processing method (Col 3, Rows 33-48, software to implement image processing method) and a computer readable medium on which the program set forth has been recorded (Col 3, Rows 33-48, software being located in computer 22).

Regarding Claim 4, *Yano* discloses wherein the output data of the plurality of color-components are decided based upon quality of printing required (Col 9, Row 32 – Col 10, Row 10, if the area is high contrast, true black ink is applied. If area is not high contrast, composite black formed by cyan, magenta, and yellow are applied).

Regarding Claim 5, *Yano* discloses wherein the output data of the plurality of color components is decided based upon characteristics of printing media (Col 9, Rows 53-57, the output of ink of penetration type, CMY composite black or evaporation type is decided on the basis of how deep it sinks into a recording medium, hence taking into consideration characteristics of printing media).

Regarding Claim 6, *Yano* discloses the plurality of items of output color-component data are decided based upon impact precision of an output dot pattern (Col 9, Row 32 – Col 10, Row 10, deciding whether or not to use true black or composite black is on the basis of impact precision of an output dot pattern. For example, at boundary areas of high contrast, it is determined that impact precision of composite black formed by CMY can cause blotting due to overlay between CMY black and surrounding color pixels. Therefore, true black is applied).

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: US 6867884 B1 discloses Halftoning method that takes into consideration the effect of cyan and magenta at areas of high contrast.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to examiner Richard Z. Zhu whose telephone number is 571-270-1587 or examiner's supervisor King Y. Poon whose telephone number is 571-272-7440. Examiner Richard Zhu can normally be reached on Monday through Thursday, 6:30 - 5:00.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

RZ²
02/19/2008

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